ABSTRACT OF THE DISCLOSURE

There are many inventions described and illustrated herein. In one aspect, present invention is directed to a thin film or wafer encapsulated MEMS, and technique of fabricating or manufacturing a thin film or wafer encapsulated MEMS employing the anti-stiction techniques of the present invention. In one embodiment, after encapsulation of the MEMS, an anti-stiction channel is formed thereby providing "access" to the chamber containing some or all of the active members or electrodes of the mechanical structures of the MEMS. Thereafter, an anti-stiction fluid (for example, gas or gas-vapor) is introduced into the chamber via the anti-stiction channel. The anti-stiction fluid may deposit on one, some or all of the active members or electrodes of the mechanical structures thereby providing an anti-stiction layer (for example, a monolayer coating or self-assembled monolayer) and/or out-gassing molecules on such members or electrodes. After introduction and/or application of the anti-stiction fluid, the anti-stiction channel may be sealed, capped, plugged and/or closed to define and control the mechanical damping environment within the chamber. In this regard, sealing, capping and/or closing the chamber establishes the environment within the chamber containing and/or housing the mechanical structures. This environment provides the predetermined, desired and/or selected mechanical damping of the mechanical structure as well as suitable hermeticity. The parameters (for example, pressure) of the final encapsulated fluid (for example, a gas or a gas vapor) in which the mechanical structures are to operate may be controlled, selected and/or designed to provide a desired and/or predetermined operating environment.